

that unlike all other textbooks of genetics they both give prominence to Winter's selection experiments in maize, experiments which the *EUGENICS REVIEW* was largely responsible for rescuing from obscurity. Mr. Watkins rightly stresses their great importance for a proper understanding of the problem of adaptation. Mr. Walker, on the other hand, has completely misunderstood the whole gist of these experiments; so much so, that one is tempted to suppose that he failed to look at the original paper—since he assumes that what the Americans call "corn" is wheat. And the fact that maize is cross-fertilizing while wheat is self-fertilizing has put Mr. Walker sadly on the wrong track in interpreting Winter's results.

Mr. Watkins' good sense of perspective has enabled him to make an excellent selection of material, choosing always the relevant and salient facts whether from plants or animals, and giving them their right emphasis in the whole picture. Eugenists will be sorry that Mr. Watkins has so little to say about man, and his peculiar problems of practical genetics—but none the less all eugenists would do well to read this book.

No doubt considerations of price limited the number of illustrations: nevertheless, more pictures would be a great improvement. If books could be mendelized, the wanted hybrid type would combine Major Hurst's magnificent wealth of cogent illustration with Mr. Watkins' austerity of text.

Mr. Walker's book is a disappointment. The author is evidently widely read; he has strung together in book form selected passages from many authors (including Gibbon); but few date from post-war years. Neither Willis nor Vavilov, Fisher nor Haldane are even mentioned as having contributed anything to the evolution problem. The underlying notion of the book is that mendelism is not of much account in evolution: and while it is a very good thing that professional geneticists should be from time to time reminded that mendelism is not enough, yet when Mr. Walker says that mendelism is concerned only with morphological characters he shows himself to be so

sadly behind the times that few geneticists will be inclined to take his warning seriously.

MICHAEL PEASE.

POPULATION

Population and Social Planning. Reprinted from *Social Forces*, October 1935. Reprinted for the Population Association of America. Price \$0.50.

THE papers collected together in this reprint* concern fundamental aspects of the population question in the United States, and they show clearly that the subject has ceased to be of merely academic interest. Administrators are already attempting to plan population growth in a country where the net reproduction rate is still considerably higher than our own. A full list of the papers is given in the footnote, and although they are all important in their own fields, three of them held the greatest interest for me—those by Tugwell, Osborn, and Notestein and Kiser.

The first analyses the position of the rural population with regard to replacement. Throughout the nineteenth century, women of child-bearing age living in rural areas produced some 50 per cent. more children than similar women in urban communities. This situation is no less marked to-day. In the period 1925 to 1929, farm women bore about 50 per cent. more children than were necessary to replace their group, as compared with an 8 per cent. deficit on the part of women in small towns and a 20 per cent. deficit in large cities. Moreover, proportionately the bulk of rural children were and still are being born in those areas where the farm income is smallest. A threefold problem thus arises. First, the urban areas are becoming increasingly dependent upon rural districts for their population supply in spite of the decline in urban mortality. Secondly, the children-producing areas are the poorest

* Tugwell, R. G. *National Significance of Recent Trends in Farm Population*. Reeves, F. W. *Rural Educational Problems in Relation to New Trends in Population Distribution*. Wooster, T. J. *Southern Population and Social Planning*. Osborn, F. *Significance of Differential Reproduction for American Educational Policy*. Notestein, F. W., and Kiser, C. V. *Factors Affecting Variations in Human Fertility*.

in the country, both from the point of view of income per head and of education. Thirdly, the ability of farm children to migrate to the cities is decreasing from day to day.

These facts are of supreme importance. In the first place they mean the socially conditioned ability of the replaced population is at a relatively low level, and is likely to be still lower in the future. Secondly, the prospect of maintaining the supply of children is scarcely hopeful, for as the United States become still more urbanized, the gap between replacement needs and population supply will tend to widen. It may widen more rapidly than we expect, if the present economic situation persists, for as Notestein and Kiser point out in their paper, although on the one hand low income and high fertility may be found together, on the other hand economic pressure and insecurity tend to lower fertility. During the depression period, the lowest income groups had the highest fertility, but this was lower compared with what it had been in the years of prosperity. Insecurity on the farm is being produced not only by low prices and the contracted demand for agricultural products, but also by the fact that the towns are no longer economically in a position to take their former quotas of rural migrants. The high fertility areas are thus being dammed up by economic pressure, and this may ultimately have a very depressing effect on the birth-rates.

The position of the rural areas in relation to population replacement leads Osborn, in his paper, to conclude that "population should be so placed in relation to country life as to maintain a proper balance in the proportion of large families and in the birth-rate of the nation as a whole." Osborn continues: "in all social and occupational groups, for couples able properly to care for their children and desirous of assuming responsibility for large families, we should attempt to diminish the economic handicaps now attaching to five or six children or more." Taken together, these two statements imply a fundamental reconstruction of the community, both as regards spatial distribution and income structure.

The third paper, to which reference has already been made, contains not only a very interesting analysis of the general efficiency of contraceptives in preventing pregnancy, with an implication that biological fecundability is probably the same to all social groups, but also an important note on the practice of abortion.

A sample of 1,000 patients of the Birth Control Clinical Research Bureau is analysed and shows that in the period from the fifth to the fourteenth year of married life, some 37 per cent. of all pregnancies were ended by criminal abortions. If, as Taussig suggests, criminal abortions form only one-half of all abortions, then the great majority of pregnancies are ended by this means. Such a conclusion bears out the results of inquiries which I myself have made, and which lead me to believe that in Western Europe abortion is at least as important as contraception in keeping down the birth-rate.

D. V. GLASS.

LENGTH OF LIFE

Dublin, Louis I., Ph.D., and Lotka, A. J., D.Sc. *Length of Life. A Study of the Life Table.* New York, 1936. The Ronald Press Co. Pp. 400. Price \$5.

BOTH these authors have been actively engaged for many years in the Metropolitan Life Insurance Company, and thus in very practical contact with the problems of human mortality and longevity. The interest shown in their numerous publications in this field has led them to produce the present book in which they aim at "setting forth with some degree of system and completeness the essential data available on the subject of human longevity." The result is a curious mixture of scientific and popular expositions, of exactitude and very doubtful conclusions.

After a simple, but very clear, description of the life table, its foundation and its components, the authors trace in it the record of progress in health from antiquity to the present day. They then turn to the many environmental and inherited factors that